

## ABSTRACT

In the on-vehicle radar apparatus of the present invention,  
the vertical scanning width of the radar beam is narrowed,  
5 before the horizontal scanning, thereby avoiding  
unnecessary data processing and improving the data  
processing efficiently. Further, the S/N ratio of the target  
detection signal is increased, thereby stabilizing the  
distance detection and its accuracy. The vertical scanning  
10 antenna is a single travelling wave excitation antenna  
(TWEA) constructed by a plurality of antenna elements.  
At the same time, the horizontal scanning antenna is a  
multi-channel antenna wherein a plurality of TWEAs is  
assigned to a plurality of horizontal directions. The  
15 horizontal scanning angle is arbitrarily widened by  
increasing the number of TWEAs.

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